CLAIMS

I/We claim:

[c1]   1.   A method of reporting T-wave alternan values, comprising:

obtaining T-wave alternan values corresponding to alternans at relative time intervals of a plurality of T-wave segments obtained from a physiological signal representative of a patient's heartbeat; and

displaying a representation of a plurality of the T-wave alternan values at the relative time intervals of the T-wave segments.

[c2]   2.   The method of claim 1 wherein displaying a representation of the T-wave alternan values comprises generating a graphic display related to the amplitude of the T-wave alternan values at the relative time intervals for selected heart rates.

[c3]   3.   The method of claim 2 wherein generating a graphic display related to the amplitude of the T-wave alternan values at the relative time intervals comprises generating a plot of the T-wave alternan values versus T-wave segment time.

[c4]   4.   The method of claim 2 wherein generating a graphic display related to the amplitude of the T-wave alternan values at the relative time intervals comprises color coding relative amplitudes of T-wave alternan values and displaying colors corresponding to the relative amplitudes of the T-wave alternan values at the relative time intervals.

[c5]   5.   The method of claim 4 wherein a highly contrasted color is assigned to measurements of T-wave alternan values that are categorized as being statistically insignificant.

[c6]   6.   The method of claim 4 wherein white is assigned to a T-wave alternan value having an amplitude less than a standard deviation for the T-wave alternan values.

[c7]   7.   The method of claim 2 wherein generating a graphic display related to the amplitude of the T-wave alternan values at the relative time intervals comprises (a) generating a plot of the T-wave alternan values versus T-wave segment time and (b) color coding relative amplitudes of T-wave alternan values and displaying colors corresponding to the relative amplitudes of the T-wave alternan values at the relative time intervals.

[c8]   8.   The method of claim 7 wherein white is assigned to a T-wave alternan value having an amplitude less than a standard deviation for the T-wave alternan values.

[c9]   9.   The method of claim 1, further comprising displaying a plot of a waveform indicative of a heartbeat associated with the T-wave alternan values.

[c10]   10.   The method of claim 1 wherein the physiological signal is from a lead and displaying a representation of a plurality of the T-wave alternan values comprises providing a plurality of frames defined by time periods of a stress test, and wherein each frame has a graphical representation of the T-wave alternan values for a plurality of T-wave segments during the corresponding time period of the frame.

[c11]   11.   A method of reporting T-wave alternan values, comprising:

obtaining T-wave alternan values corresponding to alternans at relative time intervals of a plurality of T-wave segments obtained from a physiological signal representative of a patient's heartbeat, the physiological signal being measured by a plurality of leads; and

displaying a representation of a plurality of the T-wave alternan values at the relative time intervals of the T-wave segments.

[c12]   12.   The method of claim 11 wherein displaying a representation of the T-wave alternan values comprises providing a plurality of frames for each lead defined by time periods of a stress test, and wherein each frame has a graphical representation of the T-wave alternan values for a plurality of T-wave segments during the corresponding time period of the frame.

[c13]   13.   The method of claim 12 wherein displaying a representation of the T-wave alternan values further comprises generating a graphic display related to the amplitude of the T-wave alternan values at the relative time intervals for selected heart rates.

[c14]   14.   The method of claim 13 wherein generating a graphic display related to the amplitude of the T-wave alternan values at the relative time intervals comprises generating a plot of the T-wave alternan values versus T-wave segment time.

[c15]   15.   The method of claim 13 wherein generating a graphic display related to the amplitude of the T-wave alternan values at the relative time intervals comprises color coding relative amplitudes of T-wave alternan values and displaying colors corresponding to the relative amplitudes of the T-wave alternan values at the relative time intervals.

[c16] 16. The method of claim 15 wherein a highly contrasted color is assigned to measurements of T-wave alternan values that are categorized as being statistically insignificant.

[c17] 17. The method of claim 15 wherein white is assigned to a T-wave alternan value having an amplitude less than a standard deviation for the T-wave alternan values.

[c18] 18. The method of claim 13 wherein generating a graphic display related to the amplitude of the T-wave alternan values at the relative time intervals comprises (a) generating a plot of the T-wave alternan values versus T-wave segment time and (b) color coding relative amplitudes of T-wave alternan values and displaying colors corresponding to the relative amplitudes of the T-wave alternan values at the relative time intervals.

[c19] 19. The method of claim 18 wherein white is assigned to a T-wave alternan value having an amplitude less than a standard deviation for the T-wave alternan values.

[c20] 20. The method of claim 11, further comprising displaying a plot of a waveform indicative of a heartbeat associated with the T-wave alternan values.

[c21] 21. A method of reporting T-wave alternan values, comprising:
identifying T-wave segments of a physiological signal having substantially repeating waveforms representative of a patient's heartbeat;
computing differences at relative time intervals of selected T-wave segments to provide preliminary alternan waveforms;
ascertaining a reference waveform from the preliminary alternan waveforms;

determining a final alternan waveform based on the preliminary alternan waveforms and the reference waveform, the final alternan waveform defining T-wave alternan values corresponding to alternans at relative time intervals in the T-wave segments; and

displaying a representation of a plurality of the T-wave alternan values at the relative time intervals of the T-wave segments.

[c22]   22.   The method of claim 21 wherein displaying a representation of the T-wave alternan values comprises generating a graphic display related to the amplitude of the T-wave alternan values at the relative time intervals for selected heart rates.

[c23]   23.   The method of claim 22 wherein generating a graphic display related to the amplitude of the T-wave alternan values at the relative time intervals comprises generating a plot of the T-wave alternan values versus T-wave segment time.

[c24]   24.   The method of claim 22 wherein generating a graphic display related to the amplitude of the T-wave alternan values at the relative time intervals comprises color coding relative amplitudes of T-wave alternan values and displaying colors corresponding to the relative amplitudes of the T-wave alternan values at the relative time intervals.

[c25]   25.   The method of claim 24 wherein a highly contrasted color is assigned to measurements of T-wave alternan values that are categorized as being statistically insignificant.

[c26]   26.   The method of claim 24 wherein white is assigned to a T-wave alternan value having an amplitude less than a standard deviation for the T-wave alternan values.

[c27]   27.   The method of claim 22 wherein generating a graphic display related to the amplitude of the T-wave alternan values at the relative time intervals comprises (a) generating a plot of the T-wave alternan values versus T-wave segment time and (b) color coding relative amplitudes of T-wave alternan values and displaying colors corresponding to the relative amplitudes of the T-wave alternan values at the relative time intervals.

[c28]   28.   The method of claim 27 wherein white is assigned to a T-wave alternan value having an amplitude less than a standard deviation for the T-wave alternan values.

[c29]   29.   The method of claim 21, further comprising displaying a plot of a waveform indicative of a heartbeat associated with the T-wave alternan values.

[c30]   30.   The method of claim 21 wherein the physiological signal is from a lead and displaying a representation of a plurality of the T-wave alternan values comprises providing a plurality of frames defined by time periods of a stress test, and wherein each frame has a graphical representation of the T-wave alternan values for a plurality of T-wave segments during the corresponding time period of the frame.